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PRELIMINARY CLOSE-OUT REPORT

NL/TARACORP
GRANITE CITY, ILLINOIS
NATIONAL PRIORITIES LIST SUPERFUND SITE
SEPTEMBER 2000

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I. INTRODUCTION

This Preliminary Close Out Report documents that the United States Environmental Protection Agency (U.S. EPA) completed all major construction activities for the NL Industries/Taracorp Superfund Site (NL Site), in accordance with *Close Out Procedures for National Priorities List Sites* (OSWER Directive 9320.2-09A-P). U.S. EPA conducted a pre-final inspection on August 2, 2000, and determined that the remedial action (RA) was constructed in accordance with the remedial design (RD) plans and specifications. U.S. EPA and the Potentially Responsible Parties (PRPs) have initiated the activities necessary to achieve performance standards and site completion. A photo log was created from the August 2, 2000, pre-final inspection pictorially documenting work completion (Attachment 1).

II. SUMMARY OF SITE CONDITIONS

Site Location and Regional Geology and Hydrogeology

The NL Site was proposed for the National Priorities List (NPL), on October 15, 1984, pursuant to 40 C.F.R. Part 300, and was finalized as an NPL site on June 10, 1986.

The NL Site is located in the Southwestern portion of Madison County, Illinois, within the Mississippi River Valley and the land uses in the area are mixed commercial/industrial, residential, and agricultural. The NL Site includes areas within Granite City, Madison (including Eagle Park Acres), and Venice, Illinois (Attachment 2). The contamination in these areas which encompasses approximately 5 square miles was caused by the former 30-acre secondary lead smelting facility located at 16th and State Streets in Granite City, Illinois. The primary contaminant of concern affecting the environment is lead.

Airborne emissions from the smelter stack caused extensive lead contamination in the communities mentioned above. Lead contamination from the smelter stack emissions affected approximately 1500 residences. Secondly, lead-contaminated and lead-bearing waste material from crushed battery casings were sold to fill low-lying areas and alleys - known as remote fill areas - throughout the surrounding communities. The remote fill areas affected about 100 locations, including residences and alleys. Additionally, the industrial site was identified as having significant contamination throughout the property. Piles of lead-contaminated slag and debris on-site totaled approximately 250,000 tons.

Regional Hydrogeology

The NL Site is approximately eight to ten miles south of the confluence of the Mississippi and Missouri Rivers. Granite City's municipal drinking water comes from the Mississippi River and does not appear to be affected by any contaminated ground water. The NL site is underlain by recent alluvium and glaciofluvial and glaciolacustrine deposits. Bedrock beneath the alluvium is Carboniferous age rocks consisting of limestone, sandstone, and shale. The alluvium and glacial deposit which fill the valley range in thickness from less than one foot adjacent to the bluff boundary and the Chain of Rocks reach of the Mississippi River, to greater than 170 feet near the City of Wood River. The estimated thickness of the valley beneath the NL site is approximately 100 to 120 feet. Investigations have concluded that the deposits become coarser with depth. Generally, ground water in the Granite City area occurs within the unconsolidated valley deposits under unconfined and leaky confined conditions. Recharge of ground water within the area is from precipitation and induced infiltration of surface

water from the Mississippi River and smaller surface water bodies in the area. Ground water flow is relatively slow and regionally moves in the south/southwesterly direction.

Background of Facility Operations

Historically, secondary lead smelting, metal refining, fabricating, and associated activities have been conducted at the NL/Taracorp Industrial facility since the turn of the century to about 1983. This operation produced extensive on-site and off-site contamination.

Taracorp Industries, purchased the main industrial facility property from NL Industries, Inc., in 1979, and owned it until 1997. These operations generated an on-site pile of blast furnace slag and battery casing debris waste (the Taracorp pile). In July of 1981, St. Louis Lead Recyclers, Inc. (SLLR) began using equipment on adjacent property owned by Trust 454 to separate components of the Taracorp pile. SLLR attempted to recycle lead-bearing materials to the furnaces at Taracorp and send hard rubber and plastic off-site for recycling. Hard rubber was the end waste product of this recycling product. SLLR continued operations until March 1983 when it shut down its equipment. Residual lead-bearing waste materials from the operation remained on Trust 454 property, as did some equipment.

In 1983, a State study of the Granite City lead emissions problem linked emissions from the on-site lead smelt and reclamation operations at the facility to the air pollution problem in the area. A State Implementation Plan for air pollution sources in Granite City was published in September 1983 by the Illinois Environmental Protection Agency (Illinois EPA). The Illinois EPA's Report indicated that the non-attainment status for lead air emissions in Granite City was in large part attributable to emissions associated with the operation of the secondary lead smelter operated by Taracorp and lead reclamation activities conducted by SLLR. Additionally, because of concerns over lead contamination in the communities and a documented risk to public health from exposure to high levels of lead, the State of Illinois denied an application to continue operating the smelter. Secondary lead smelting operations were discontinued during 1983 and the equipment dismantled. Metallico, the current owner of most of the main industrial property, continues to perform metal refining at the facility. Taracorp continues to own the property where the large slag/debris pile is located. The other property owners for the main industrial property are BV&G, Rich Oil and Trust 454.

Remedial Investigation (RI)/ Feasibility Study (FS)

NL, as former owner of the facility, voluntarily entered into an Agreement and Administrative Order by Consent with the U.S. EPA and Illinois EPA in May 1985 to implement a RI/FS. The RI/FS work began in 1986, and the purpose of the RI was to identify the nature and extent of contamination at the NL Site and, to determine any risks to the public health or welfare or the environment caused by the releases of contamination. The results are provided within the RI Report which also included a baseline risk assessment conducted to characterize the current and potential threats to public health and the environment at the NL Site.

The RI for the NL Site indicated the need to prevent direct contact with, ingestion and inhalation of lead-contaminated soils and waste materials in the Taracorp pile, the SLLR piles, and the main industrial facility; residential soils contaminated by lead fallout from the smelter stack; and battery case material used as fill material for alleys, driveways, and other areas. Additionally, the RI indicated a need for further ground water monitoring in the deeper zone of the upper aquifer and a mechanism for remediation of any contaminants in the ground water that are detected in concentrations that would present an endangerment to public health and the

environment. Furthermore, another ongoing study was being conducted, which was a blood-lead study of the area children. This blood study indicated that 16 percent of the children in the surrounding areas, and 25 percent of those living closest to the NL Site had blood lead levels above 10 micrograms per deciliter, the level of concern set by the Illinois Department of Health.

The goals of the FS were to fully evaluate clean-up alternatives that can be used to remove, reduce or stabilize threats from contaminants at the NL Site. Seven different cleanup alternatives/scenarios to address contamination were evaluated in the FS. The estimated costs of these remedies ranged from about $500,000 for a "no action" remedy which included only monitoring and deed restrictions, to $67 million which assumed all the contaminated soil and waste material in the slag pile would be disposed off-site. Five of the remaining remedies involved removing and disposing of drums off-site, excavating lead contaminated soil and battery chips from residential properties and alleys and consolidating them with the industrial lead pile, capping the pile and moving some of the soil to an off-site landfill and performing additional ground water monitoring. For all the remedies requiring soil cleanup, the PRPs proposed that soil be cleaned up to 1,000 parts per million for both industrial and residential, but refused to develop an alternative for a residential cleanup level of 500. Hence, U.S. EPA developed such an alternative in an addendum to the FS. Following a detailed analysis of the alternatives by U.S. EPA, a Proposed Plan for remedial action was issued in January 1990.

Record of Decision (ROD), Decision Document Reaffirming ROD, and Explanations of Significant Differences

After taking into consideration all public comments, the Regional Administrator signed a Record of Decision (ROD) on March 30, 1990. The cleanup decision embodied in the ROD addressed the Taracorp pile, the SLLR piles, and residential soil, alleys, and driveways that are contaminated by airborne lead and/or hard rubber battery casing material, ground water monitoring and selected a 500 ppm soil cleanup level for residential uses, and a 1,000 ppm cleanup level for industrial uses. The estimated cost of this remedy was $30 million. The specific elements of the remedy are outlined in detail below.

Since that time the ROD has been reopened once, and four Explanations of Significant Differences (ESDs) have been issued.

The first ESD, signed on May 7, 1993, allowed for battery case material that was contaminated with greater than 500 ppm lead but was not hazardous per the Toxicity Characteristic Leaching Procedure (TCLP) test, to be disposed of at an off-site landfill rather than consolidated with the Taracorp pile, as originally specified in the 1990 ROD. During U.S. EPA's remediation of battery case material, which commenced in the spring of 1993, numerous additional battery case locations were discovered. Over 100 such locations were identified with lead concentrations exceeding 500 ppm including a large roadway termed Slough Road. Given this large increase in volume of battery case material to be remediated (e.g., 1990 ROD cost estimates were based on 18 locations), U.S. EPA decided to reevaluate the excavation and disposal remedy for the battery case material contained in the 1990 ROD.

The second ESD, signed on January 27, 1994, allowed for disposal of residential soils contaminated with greater than 500 ppm lead and that are not hazardous per the TCLP test at an off-site landfill rather than consolidated with the Taracorp pile, as originally specified in the 1990 ROD. This was also based upon an increase in the volume of soils to be dealt with.

Next, as an agreement under a legal action brought by the PRPs and the City of Granite City to enjoin the remedy, U.S. EPA reopened the Record of Decision. This is discussed further in the section below on Enforcement History. On February 17, 1995, U.S. EPA released a Proposed Plan for remedy reconsideration. The Proposed Plan reaffirmed the 500 ppm residential lead soil cleanup level which was the primary concern of the PRPs. The Proposed Plan also reaffirmed the capping/containment remedy for the Taracorp pile which was the primary concern of the City of Granite City. Furthermore, in response to the recently detected ground water contamination, U. S. EPA also included a ground water remedy component in the Proposed Plan. Additionally, provisions that were not contained in the 1990 ROD included the additional remote fill areas where shredded battery cases had been used for fill, and based upon a multi-media approach to the lead contamination problem, provided for making a High Efficiency Particulate Arrester (HEPA) vacuum available to residents in the cleanup zone for interior house dust cleaning, and paving a truck lot at 1420 State Street to prevent possible lead recontamination of nearby residential properties, among other provisions.

On September 29, 1995, U.S. EPA issued a Decision Document and Explanation of Significant Differences (DD/ESD). This document retained the 500 ppm residential cleanup standard for lead, and the Taracorp pile capping/containment component, added a ground water remediation component and additional locations requiring remediation where shredded battery cases had been used for fill to the final remedy, as well as the above-mentioned components. The increased costs estimates for remediation were presented accordingly.

Finally, an ESD was issued in September 2000. Based on the installation of additional monitoring wells in March and June 2000, data collected indicated that the lead in ground water does not migrate more than 200 feet from the Taracorp slag pile where it is likely buffered by the chemistry of the water and soil. Ground water contaminant concentrations do not exceed the action levels for lead (15 ug/L) off-site. In fact, the plume of ground water contamination has been found to extend only up to 200 feet downgradient from the perimeter of pile. There is site-specific information which demonstrates that the lead is likely being adsorbed onto the soil particles shortly after it is released from the pile, and that the plume of contamination is stable or decreasing. Additionally, U.S. EPA anticipated that the concentration of lead in ground water in the perimeter wells around the pile will decrease since the highly contaminated main industrial area soils were consolidated with the Taracorp pile and the pile was capped with a RCRA subtitle C, multi-layered cap in 1999. This consolidation and capping will divert precipitation away from the waste materials in the Taracorp pile and, thus, decrease the amount of lead leaching from the pile and other areas of the main industrial area in the future. Collectively, this information indicates that ground water contamination at the NL Site is very limited and will likely decrease even further in the future. Given the stabilization and containment of the source area, it is fully expected that the ground water contamination will continue to decline. Hence, the September 2000, ESD requires that monitoring be continued and that a contingency plan be implemented if ground water contamination increases above acceptable levels rather than the installation of a ground water containment system at the NL Site. Based on current site conditions, U.S. EPA anticipates that ground water monitoring will continue and that no further remedial construction activities will be necessary.

The Final Selected Remedy

The components of the remedy as specified in the Record of Decision (ROD) dated March 30, 1990; Explanation of Significant Difference (ESD) dated May 7, 1993; ESD dated January 27, 1994; the Decision Document and Explanation of Significant Differences (DD/ESD) dated September 29, 1995, and the ESD dated September 2000 are:

- o Installation of an upgraded security fence around the expanded Taracorp pile;
- o Deed Restrictions and other institutional controls to prevent access to the Taracorp pile;
- o Performance of soil lead sampling to determine which areas must be excavated and the extent of the excavation;
- o Inspection of alleys and driveways and areas containing surficial battery case material in Venice, Eagle Park Acres, Granite City, Madison and any other nearby communities to determine whether additional areas not identified in the Feasibility Study must be remediated as described below;
- o Performance of blood lead sampling to provide the community with current data on potential acute health effects associated with Site contamination;
- o Installation of a minimum of one upgradient and three downgradient deep wells, monitoring of ground water and air, and inspection and maintenance of the cap;
- o Removal and recovery of all drums on the Taracorp pile at a secondary lead smelter;
- o Consolidation of waste contained in adjacent St. Louis Lead Recyclers (SLLR) piles with the Taracorp pile;
- o Excavation and off-site disposal of battery case material (i.e., remote fill) from all applicable alleys and driveways in Granite City, Madison, and Venice, Illinois, and any other nearby communities with lead concentrations greater than 500 ppm[1];
- o Excavation and consolidation with the Taracorp pile of all unpaved portions of the adjacent Trust 454, Rich Oil, and BV&G Transport properties with lead concentrations greater than 1000 ppm;
- o Excavation and consolidation with the Taracorp pile or off-site disposal of all residential soils and battery case materials in Granite City, Madison, and Venice, Illinois, and any other nearby communities with lead concentrations greater than 500 ppm[2];

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[1]For the areas which were contaminated with site-related hard rubber battery case material (remote fill areas), the chips have been found surficially, at a depth of approximately 6" to over 3 feet. Several of the remote fill areas are or were paved (alleys, driveways, parking lots). Paving protocol required a minimum of two inches of asphalt. Other remote fill areas were excavated to the cleanup level or to a maximum depth of three feet. These areas were then restored with clean fill and sod or seed (or vegetative cover commensurate with the original ground cover in the case of abandoned or vacant lots). Deed restrictions and other institutional controls will be used to limit access to these properties where some waste was left in place and also the Taracorp pile.

[2]For the areas contaminated from airborne emissions, the soils contamination has been found to a maximum depth of 12". The protocol for residential soils removal was excavation to

- o Consolidation of the soils and crushed casings and lead contaminated materials from the adjacent waste piles into the existing Taracorp slag pile if the materials do not fail the TCLP;

- o Excavation and consolidation with the Taracorp pile of all unpaved portions of the adjacent area with concentrations greater than 1000 ppm;

- o Inspection of the interiors of homes on property to be excavated to identify possible additional sources of lead exposure and recommend appropriate actions to minimize exposure;

- o Monitoring of ground water at the industrial facility and implementation of a contingency plan, if needed, to remediate contaminated ground water;

- o Implementation of dust control measures during all remedial construction activities;

- o Construction of a RCRA-compliant, multi-media cap over the expanded Taracorp pile and a clay liner under all newly-created portions of the expanded Taracorp pile;

- o Development of contingency plans to provide remedial action in the event that the concentration of contaminants in ground water or air (lead or PM_{10} (particulate matter greater than 10 microns,, exceed applicable standards or established action levels, or that waste materials or soils have become releasable to the air in the future[3];

- o Development of contingency measures to provide for sampling and removal of any soils within the zone of contamination, defined by the soil lead sampling to be implemented above, with lead concentrations above 500 ppm which are presently capped by asphalt or other barriers but become exposed in the future due to land use changes or deterioration of the existing use; and

- o Monitoring of nearby communities to determine if additional areas need remediation or lead exposures need mitigation.

Enforcement Activities and History

Following unsuccessful efforts to negotiate a settlement with the PRPs for remedy design and implementation, U.S. EPA, on November 27, 1990, issued a Unilateral Administrative Order (UAO), pursuant to Section 106 of

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a maximum depth of 12" and properly disposed of off-site, and the yard fully restored with clean fill and sod. Therefore, by removing all of the contaminated soil, the areas require no use restrictions.

[3]Contingency plans are in-place to provide remedial action(s) in the event that concentrations of lead or PM10 in air exceed applicable standards or established action levels, waste materials or soils have become releasable to the air, or the cap is not effective in allowing the ground water standards for metals to be attained via attenuation in a reasonable period of time. Based on present site conditions, the U.S. EPA believes all construction for the remedy is complete.

CERCLA, 42 U.S.C. § 9606, directing certain PRPs to undertake the response actions identified in the ROD. In issuing this UAO, U.S. EPA made a number of findings based on the Administrative Record, including a finding that the release and threat of release of hazardous substances from the facilities at the NL Site is or may be presenting an imminent and substantial endangerment to the public health or welfare or the environment.

None of the recipients of the Order notified U.S. EPA of its intention to comply fully with the Order. In 1991, the U.S. EPA brought an action in Federal Court to compel certain PRPs to perform the NL Site remedy and to collect penalties for their failure to comply with the 1990, UAO. In view of the failure or refusal of PRPs to comply with the UAO, U.S. EPA decided to use Superfund money to proceed with implementation of the remedy selected in the ROD.

In 1994, City of Granite City officials and the PRPs sought a court order halting U.S. EPA's cleanup, disagreeing with the 500 ppm cleanup level for residential uses. As a result of this action, U.S. EPA agreed to suspend certain cleanup activities and reopen the public comment period for the residential soil cleanup level to allow for U.S. EPA's evaluation of all information that had become available subsequent to the March 30, 1990, ROD. Accordingly, U.S. EPA released a Proposed Plan and reopened the public comment period for the residential soil lead cleanup level on October 14, 1994. U.S. EPA did reconsider any new information submitted by the PRPs. On September 30, 1995, U.S. EPA issued the Decision Document/Explanation of Significant Differences (DD/ESD), as is discussed more fully above. U.S. EPA then resumed remedial activities.

In 1996, the PRPs and the City of Granite City parties again tried to enjoin the U.S. EPA clean-up activities. The Federal District Judge's opinion, issued in August 1996, was that the PRPs did not demonstrate the harm that was alleged and that the Court had no authority to halt U.S. EPA's remedial efforts. The PRPs then approached U.S. EPA to negotiate the remaining work to be done. In July 1998, some of the generator defendants took over the Remedial Action and have finished nearly all of the cleanup activities at the NL Site. This work was performed under a Consent Decree. Other enforcement actions are on-going to recover past costs.

Remedial Design (RD) /Remedial Action (RA)

Starting in 1991, U.S. EPA performed most of the RD for the NL Site and about half of the RA. In February 1993, the U.S. EPA entered into an Interagency Agreement (IAG) with the U.S. Army Corps of Engineers (the Corps) to design and implement the remedy. The Corps, in turn, contracted with OHM Remediation Services Corporation to conduct the remedial work under a contract. The cleanup was separated into two distinct phases: 1) a rapid response - comparable to a removal action, and 2) a longer-term remedial action managed by the Corps. For the rapid response action, the contractor sampled the property where battery casings were used as fill, and cleaned approximately 110 residential areas/alleys requiring immediate attention. For the remedial action, OHM cleaned up another 650 residential lots and alleys that were impacted from smelter stack emission fallout. In general, the contractor was directed to identify the extent of contamination at each property and to eliminate the exposure.

U.S. EPA completed the RD for the soil cleanup portion of the NL Site and began to remediate the contaminated residential soil, beginning with the areas of greatest contamination first, the highly lead-contaminated battery case material that was used as fill material, and the areas closest to the former smelter.

Beginning in 1998, certain of the generator PRPs took over the RA at the NL Site and completed the remedial activities.

Completed Remedial Activities

In May 2000, a public meeting/press conference was held to announce that a majority of the work had been completed. A summary fact sheet, dated May 2000 (Attachment 3) documents the work which was completed.

On August 2, 2000, U.S. EPA conducted a pre-final inspection at the NL Site. U.S. EPA documented that the following activities were completed in accordance with the ROD and ESDs:

- ✓ A total of 1505 residential yards containing lead-contaminated soil were excavated and restored. Of these, approximately 770 were completed by the PRPs;
- ✓ All excavated areas of the NL Site were backfilled with clean soil and revegetated;.
- ✓ Home interiors were vacuumed with a HEPA vacuum if the homeowner agreed to this measure;
- ✓ A cleanup of the 16-acre main industrial property, including capping of a 250,000-ton hazardous slag pile with a RCRA-cap, was completed in September 1999;
- ✓ Approximately 100 residential yards and alleys in Venice and Eagle Park Acres where battery chips were used as fill material were cleaned up in 1993 -1999;
- ✓ An underground storage tank and drums were removed and stabilized;
- ✓ Soils that were transported off-site were tested to ensure that the landfill requirements were achieved;
- ✓ Excavation activities were performed so that all soils that remain on the residential properties are below the selected contact standard of 500 ppm total lead. All soils that remain on the industrial properties are below the selected contact standard of 1,000 ppm total lead;
- ✓ Any soils which failed TCLP testing for lead (i.e., below 5.0 mg/L) were treated prior to disposal;
- ✓ All excavated areas of the industrial facility were consolidated into the Taracorp piles and backfilled with clean soil;
- ✓ Quarterly ground water sampling has been on-going. Sampling results will continue to be evaluated to determine if additional sampling is necessary and whether any ground water remediation is necessary;
- ✓ Ground water monitoring wells were added to the ground water monitoring network for the NL Site. Several wells were abandoned and or replaced;
- ✓ Temporary site security fencing and upon completion of capping, permanent fencing was put in place at the NL Site; and
- ✓ Slough Road area, contaminated with battery chips, was paved.

III. DEMONSTRATION OF QUALITY ASSURANCE/QUALITY CONTROL (QA/QC) FROM CLEANUP ACTIVITIES

U.S. EPA and the State reviewed the RA work plans and specifications and construction for compliance with Quality Assurance/Quality Control (QA/QC) protocols. U.S. EPA provided continuous oversight of the remedial activities via the U.S. Army Corps of Engineers through an interagency agreement. Construction activities at the NL Site were determined to be consistent with the ROD, RD plans and specifications, all workplan for construction of the RA, and RD/RA statement of work attached to the IAG in the case of the Army Corps of Engineers, and the Consent Decree, in the case of the PRPs.

The RD and the construction specifications for the RA were carefully reviewed by U.S. EPA for compliance with all requirements of the ROD or any applicable plan modifications. Analytical results were determined to be accurate to the degree needed to assure satisfactory execution of the RA and are consistent with the ROD and the RD plans and specifications. The QA/QC program utilized throughout the RA was sufficient and enabled U.S. EPA to determine that the testing results reported were accurate to the degree needed to assure satisfactory execution of the RA consistent with the ROD and RD plan modifications.

The contractors for the construction adhered to the approved Construction Quality Control plan (CQCP). The CQAP incorporated all U.S. EPA and State requirements. All confirmatory inspections, independent testing, audits, and evaluations of materials and workmanship were performed in accordance with the approved construction drawings, technical specifications, and CQAP. The Quality Assurance Project Plan (QAPP) incorporated all relevant U.S. EPA and State QA/QC sampling and analytical procedures and protocol. All sample collection activities at the NL Site were conducted in accordance with U.S. EPA protocols. U.S. EPA has determined that analytical results are accurate to the degree needed to assure satisfactory execution of the RA.

Construction quality assurance was performed by the Army Corps of Engineers, which maintained a continual on-site presence. The U.S. EPA Remedial Project Manager (RPM) and/or the State visited the NL Site approximately twice per month to review construction progress and evaluate and review the results of the QA/QC activities. Additionally, weekly progress meetings via conference calls were held to discuss progress and issues. Deviations or non-adherence to QA/QC protocols, drawings, or specifications were properly documented and resolved.

IV. ACTIVITIES AND SCHEDULE FOR SITE COMPLETION

The following activities will be completed according to the schedule below:

Activity	Estimated Completion	Responsible Person/Organization
Completing the following punch list items: identified in pre-final inspection which include:		

-Resolve minor residential put-back issues[4]: (such as installing concrete runner along right front fence at 1731 Maple, Granite City);	December 31, 2000	PRPs
- Approve Ground Water Monitoring Plan;	December 31, 2000	U.S. EPA
- Revegetate landfill cap, as needed;	Spring 2001	PRPs
-Conduct Final Inspection;	Spring 2001	U.S. EPA/PRPs
-Confirm that the institutional controls are in-place for both industrial and residential properties, as appropriate;	Spring 2001	U.S. EPA/PRPs
-Approve RA Report; and	June 30, 2001	U.S. EPA
-Approve of Final Close Out Report.	July 31, 2001	U.S. EPA

V. SUMMARY OF REMEDIATION COSTS

The original cost estimate to implement the RA described in the ROD was $30,000,000 which included an annual O&M cost of $35,300 for 30 years. The latest cost estimates are approximated at $60,000,000.

These cost increases were first defined during the pre-design work. The exact number of residential yards contaminated by airborne lead, and battery chips requiring cleanup was identified. There was a significant increased in the number of yards to be cleaned than what was first known. Also, the cleanup was plagued by both legal difficulties and unforeseen inefficiencies and costs which affected the project in numerous ways. At the time that this Preliminary Closeout Report was prepared, all of the project costs have not yet been reported.

VI. FIVE-YEAR REVIEWS

Hazardous substances will remain at the NL Site above health-based levels that allow unrestricted exposures after completion of the RA. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121(c), and the National Contingency Plan (NCP), and as provided in the current guidance

[4]Pursuant to the Consent Decree, the stack emission residential area remediation was to be completed by December 31, 1999 provided that access was obtained by August 31, 1999. This deadline was published in the paper, and announced at several public meetings. However, the consent decree states that settling defendants shall remain obligated to remediate any residential yards that qualify for remediation that had not been previously identified or for which access to the property had not been previously granted, *until December 31, 2000. There is* currently one (1) such property known.

on Five Year Reviews: OSWER Directive 9355.7-02, *Structure and Components of Five-Year Reviews*, May 23, 1991, OSWER Directive 9355.702A, *Supplemental Five-Year Review Guidance*, July 26, 1994, and the *Second Supplemental Five-Year Review Guidance*, December 21, 1995, require that periodic reviews (no less than every 5 years) are to be conducted for sites where hazardous substances, pollutants, or contaminants remain at the site above levels that will not allow for unlimited use or unrestricted exposure following implementation of remedial actions for the site. For a fund lead site, RA start is the date that the U.S. EPA contracting officer signs contract for RA or when the Federal agency signs an IAG and funds are obligated.

The RA start date for the NL Site is March 15, 1993. The first five-year review was completed on March 31, 1999. The next five year review will occur prior to March 15, 2003, which is ten years after the first RA start. The purpose of the future five-year reviews will be to evaluate whether the completed RA remains protective of human health and the environment, and is functioning as designed at sites where hazardous waste remains on-site at levels that do not allow for unlimited use and unrestricted exposure.

William E. Muno, Director
Superfund Division

Date: 9/26/00